

sans, can alone enable him to draw out his specification properly. It is true the lawyer will be called upon to give to its legal phrases and finely-drawn pains and penalties of any breach in the performance thereof; but the lawyer will have to work upon a base of the engineer's planning, and, be sure, the blame will rest on him, if any oversight has been committed on his part.

In the specification must be described the exact method by which the various works enumerated therein are to be performed. All the drawings must be enumerated, and more particularly referred to and explained: in short, the specification must be a book of reference, as it were, for the contractor, by which he can settle dimensions, quantities, and appeal to, in case of any dispute with his employers, as to the proper performance of his duty. There can therefore, I think, be no doubt but that the engineer must be a thorough man of business.

Because I have not alluded in these examples to the architect, it must not be supposed that such documents as estimates and specifications are foreign to his practice, for, equally with the engineer, must he be capable of directing the *modus operandi* of his undertaking,—may, even probably with still greater minuteness of detail, seeing that his work is generally more minute, and depending more particularly on exact dimensions for its success.

Both architects and engineers must also understand those branches of law which relate to their profession, and study the science of jurisprudence, so far as to enable them to judge of the legality of their proceedings, to prevent their employers from being involved in law-suits through their means, and to extricate them by the shortest way when so involved, by a cessation or alteration of the offensive operations, if the cause be connected with their pursuits. I mean not their duties should in any way trench on those of the attorney, or that they should advise in any matter involving a legal or technical question, for "a little law is a dangerous thing," but they should always understand the particular sections of the law relating to their operations, that they may be able to steer clear of the dangerous rock of litigation.

All the laws of England contain enactments and regulations concerning building, and they consist both of written laws or statutes, and unwritten laws, or laws of common custom. It would be out of place here to describe all the laws which affect the operations of an engineer or architect, but I may be pardoned for making mention of one or two points that have come within my experience, to serve as illustrations of my statement, that they should know "their own law."

For instance, when the inhabitants of a county are liable for the repairs of a public bridge, they are liable also to repair, to the extent of 100 yards, the highway at each end of the bridge. One instance came under my observation, in which a surveyor neglected not only to take into account the existence of that law in his estimate of the work to be done, but even through his ignorance suffered an action to be brought against himself, as the representative of the county. He lost the action, and the magistrates refused to bear him harmless, "because he ought to have known the law."

I may mention another instance in the case of a bridge. An engineer was employed by a private gentleman to build a bridge for a public road upon his estate: two years after its completion it was washed away by a flood. It had become so useful to the public that it was necessary to have it rebuilt, and the owner then thought that it might be erected at the expense of the county. But the county refused, because his engineer had not submitted his plans to, and obtained the approval of, the county surveyor.

An architect designed and erected for a gentleman a very expensive conservatory, and it was made portable, for as this gentleman was only a yearly tenant, he intended to remove it should he change his residence. But his architect erected the conservatory on a brick foundation: it thus became a fixture, and the property of the landlord.

Examples of such cases might be repeated until the relation of them might fill a considerable volume, but those mentioned will serve to show that the artist employed to execute any

works should inquire concerning the laws relating to them.

I have now said as much as the limits of a lecture will allow, upon the duties required of architects and engineers, and I will say a few words upon the duties of the general community with regard to architecture more especially.

If we refer to history we shall find that exactly in proportion as civilization advanced architecture flourished—had its rise, its progress, and decay. It took its styles, its varieties, and its tones, from the nations who invented or introduced it, and what may be called, with great propriety, a national style, always existed.

Greece, during her independence, invented that architecture which, even at the present day, is our model. Her princes and rulers esteemed it the highest honour to be ranked with artists, and her buildings were looked upon by all as types of her glory.

Republican Rome, although she borrowed her designs from Greece, and built by the hands of Grecian artists, cherished architecture, because, through it, the eternal city might be embellished, and the dignity of its citizens be enlarged, and although this did not, perhaps, arise from pure love and veneration of the art, it had its effects, and buildings were produced that have been handed down to us as forms worthy to be imitated to the present day.

The architecture of England also had its rise, progress, and decay. Its rise during the Anglo-Normans, its progress during the reigns of the Plantagenets and Tudors, when it arrived at the greatest excellence, and its decline may date from James I. (if we may include the Elizabethan, which, although not indigenous, has become, and perhaps deservedly, a favourite style in England), almost up to our own times; I say almost, for, latterly, under the fostering patronage of royalty, and men of taste and genius, it has struggled into a new existence: let us hope that it is the dawn of a new era for architecture and the fine arts in England. That this germ may bud and grow into healthy beauty, it will require the steady co-operation of all Englishmen connected in any way with architecture. Genuine professors of the art will gladly give their best energies to the task of regeneration, and we have already examples which tell in glorious language (language engraven in stone) what will be the result of those energies. Nothing is wanted but men of influence and taste to add weight to the balance already inclining so decidedly in favour of purity and fitness of style.

I am an advocate for fitness in the style of architecture of every building, civil, military, or ecclesiastical; and would those through whose patronage the fine arts flourish study, equally with its professors, the true meaning and intent of fitness, there would speedily be an end to incongruity, and English buildings would stand prominently out as types of English architecture.

Both Grecian and Palladian architecture have taken so firm a root in the soil of England, that any attempt to dismiss the styles at once would be useless, and perhaps fatal to the regeneration of a national one. But will not a little consideration show that these styles are unfitted for the English climate throughout the year? The windows, few and far between, obstruct the light. The low pitched roofs retain the snow and rain, and the projecting porticoes throw shadows, where there is already too much shade. An Italian villa, appropriately situated, may fitly serve as a summer residence, but we must seek in another style that comfort and homeliness so loved by all Englishmen: for this style we need not become imitators or pilferers from a foreign nation.

The high pitched roof, the ornamented gable, the oriel window, the irregular plan, suitable as well for internal convenience as for external beauty, are all characteristics of our English style, and each feature has, besides, fitness to our climate to further recommend it. I wish particularly to be understood that I now speak of domestic architecture,—for that of public edifices we may still be indebted to Greece or Rome.

Our palaces, institutions, and prisons may still be in the decorated Corinthian, the chaste Palladian, or the stern and sombre Doric.

But let our residences, our country residences, serve to keep us in mind of our former genius, while they add to our comfort and enjoyment.

One word more before we leave this subject, upon a point which every man has power to forward. I allude to internal decoration. In this branch of art the house-painter, the paper-hanger, and the joiner, are too often allowed to usurp the place of artists, and suffered to bedaub the walls with incongruous colours, or tasteless wood-work. Joiners, in particular, have a kind of systematized patent to work evil things; custom to one set of forms and method of work, has so fixed itself upon us, that the same set of moulding planes, the same kind of paneling, serves for all styles of houses. The architect himself is probably somewhat to blame in this, but I believe only to a small extent, for builders, not architects, are generally employed to run up the brick and stucco boxes called houses, and these, building either per contract, or for themselves, to save money and trouble, are little inclined to study propriety in internal finish. It is not that the architect considers it to be beneath him to be the decorator: for Raffaele painted the walls of the Vatican. Rubens' hand embellished the ceiling of Whitehall, Sir James Thornhill decorated the walls of the chapel and hall of Greenwich, and we have Owen Jones in our day.

It cannot, therefore, be through any false notion of the architect that these internal finishings are left to artisans, but whether it be or not, every gentleman, every man of cultivated mind is to blame who suffers his house to be coloured up to suit the taste of the sign painter, who without any feeling of art in his composition daubs away in any shade of any pigment he may fancy to be in fashion.

Many patrons of the arts would fire up and say indignantly, "I do not suffer this outrage upon taste to be committed in my house." And I am only happy to admit that there are some glorious exceptions to my rule, but that they are exceptions I will uphold, and say confidently that eight out of ten have houses painted, fitted, and furnished, with designs that have issued from the shop, and not from the studio.

Poor men in the present state of things cannot, perhaps, help this; and the poor man with refined feelings for art must submit, for he cannot alter.

But rich men are those to whom I point, and say, study art, and be judges yourselves where art is employed, or consult those whose whole life has been devoted to the cultivation of it, and who will work for you, not for money alone, but for the love of art: architects should be such men.

[After an outline of the system of instruction he intended to follow, the lecturer continued,]

It is likewise my wish to make all the students familiar with the use of tools, and that they should become practical as well as scientific workmen; that this is essential, I have the high authority of the late Mr. Telford, who has said,—"Youths of respectability and competent education, who contemplate civil engineering as a profession, are seldom aware how far they ought to descend in order to found the basis of future elevation. It has happened to me more than once, when taking opportunities of being useful to a young man of merit, that I have experienced opposition in taking him from his books and drawings, and placing a mallet and chisel or a trowel in his hands, till, rendered confident by the solid knowledge which only experience can bestow, he was qualified to insist on the due performance of workmanship, and to judge of merit as well in the lower as in the higher departments of a profession in which no kind or degree of practical knowledge is superfluous."

A NEW SORT OF CHURCH ORGAN has been constructed, in two parts, one for each side of a window. The exterior, says the *Daily News*, is architectural, and of the colour of dark oak. Each of the two compartments is 26 feet in height, and the bellows are so arranged as to admit of their being placed under the window, which is to appear in the centre. The object of the designer, a Mr. Walker, has been to construct an instrument combining the advantages of a German organ with the principles of the extended compass on the Manuals.